

and 16-18 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Examiner noted that regarding claims 1-3, 6, 8-10, 12, 13 and 17, the term “about” may not be included in the range limitation since the term renders the range limit indefinite.

Claims 1-13, 16-18, 20, 23, 24 and 33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over French Patent No. WO 87/07921 issued to Ciraud (“Ciraud”) in view of U.S. Patent No. 4,737,050 issued to Abd. El Halim (“Halim”). Claims 1-13 and 16-18 were further rejected under 35 U.S.C. § 103(a) as being unpatentable over Halim in view of either U.S. Patent No. 4,175,885 issued to Jeppson (“Jeppson”) or U.S. Patent No. 4,175,885 issued to Sandström (“Sandström”). Claims 1-13 and 16-18 were further rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,832,079 issued to Moorhead (“Moorhead”) in view of U.S. Patent No. 5,215,402 issued to Stowell et al. (“Stowell”).

Reconsideration of the application in view of the following remarks is respectfully requested.

Response to the Specification Objection

The Specification has been amended in accordance with the Examiner’s request that all recitations including S.I. units be accompanied by their equivalent in English units. Due to the large number of equivalent English units inserted in the specification, Applicant submits a Substitute Specification herewith. No new matter has been added to the Specification. Applicant believes the Specification is now in appropriate form.

Response to Section 112 Rejections

Claims 1-13 and 16-18 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, Claims 1-3, 6, 8-10, 12, 13 and 17 include the term “about” which the Examiner believes to render the range limits indefinite. Applicant respectfully disagrees. For example, the term “about” used to define the area of the lower end of the mold is between 25 to about 45 percent of the mold entrance is held to be clear, but flexible.

Ex Parte Eastwood, 163 U.S.P.Q. 316 (Bd. App. 1968). Similarly, in *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 Fed. 2nd 1540, 220 U.S.P.Q. 303 (Fed. Cir. 1983), the Court held that a limitation defining the stretch rate of a plastic as “exceeding about 10 percent per second” to be definite because infringement could clearly be assessed through the use of a stopwatch. Only where there was close prior art or nothing in the prior art to provide any indication as to what range the specific activity is covered by the term “about” was the term “about” found invalid for indefiniteness. *Amgen, Inc. v. Chugai Pharmaceutical Co.*, 927 Fed. 2nd 1200, 18 U.S.P.Q. 2nd 1016 (Fed. Cir. 1991). See M.P.E.P. Section 2173.05(b). In accordance with the *Eastwood* and *Gore* cases, Applicant contends that the term “about” as used in the claims are valid and provide a definite range limitation.

Response to Section 103 Rejections

Claims 1-13, 16-18, 20, 23, 24, and 33 were rejected under 35 U.S.C. § 102(a) as being unpatentable over Ciraud in view of Halim. Claims 1-13 and 16-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Halim in view of either Jeppson or Sandström. Claims 1-13 and 16-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Moorhead in view of Stowell.

Response to § 103 Rejection: Ciraud in view of Halim

Referring to the instant invention, independent claim 1 is directed toward a method for compacting a mat of hot mix asphalt that has been laid by an advancing asphalt paver. The method includes advancing the asphalt compactor over the laid asphalt such that a compaction surface of the compactor is engaged with any one portion of the mat for a period of at least 1.5 seconds. The method further includes that the compaction surface of the compactor applies a maximum average load stress to the mat of less than about 50 kPa.

Ciraud discloses a machine for making coverings of concrete and similar products poured from a hopper. Anyone skilled in the art of asphalt and concrete paving understands that the equipment and methods for asphalt and concrete paving are clearly differentiated, provide vastly different processes to pave very different materials, and are non-analogous for purposes of prior art references. Further, the description of Ciraud makes clear that the apparatus is not

operating by a similar or analogous process. Namely, the “at least one belt (8)” referred to by the Examiner is actually described in the Ciraud patent as “an endless sheet (8) of which the width corresponds at least to that of a distributor of the hopper (19), means for driving (12, 13) the sheet being provided in order to make its surface slide on the covering (9) progressively formed during the displacement of the frame which carries it.” Applicant respectfully requests that the Examiner reconsider Ciraud as a relevant reference for the instant invention.

Halim does not correct the deficiencies of Ciraud. Halim discloses an improvement for compacting asphalt in which hot asphalt is spread onto a compacted roadbed material and then compacted by applying pressure substantially simultaneously by a first and second means. The Examiner states that Halim teaches using an apparatus having a belt in order to compact hot asphalt. The Examiner then states that regarding the limitations of duration and load, these references are silent. The Examiner then incorrectly concludes that load and duration is inherently left to one skilled in the art in order to ideally suit a particular application.

Under the principles of inherency, in order for a prior art device to inherently anticipate a claimed process, the device must necessarily perform the method claimed during its normal and usual operation. See MPEP §2112.02. Further, the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-1 (Fed. Cir. 1999) (citations omitted). The load pressure and duration of applied load pressure are not necessarily present in the references cited. Further, although the load pressure and duration *may* occur, the Examiner has not established that this occurrence is more than a mere possibility.

Claims 1-13, 16-18, 20, 23, 24, and 33 are patentable under § 103 over the combination of Ciraud in view of Halim because this combination of references fails to disclose or suggest, *inter alia*, a method of compacting a mat of hot mix asphalt by applying a maximum average load stress to the mat of less than about 50 kPa, wherein a compaction surface is

engaged with any one portion of the mat for a period of at least 1.5 seconds. Applicant respectfully asserts that the Examiner incorrectly states that it would have been inherent to one skilled in the art to select the load and duration to suit a particular application in order to obtain a desired resulting pavement structure. As further support for Applicant's position, Applicant submits herewith a Rule 132 Affidavit signed by the inventor Mr. Ian James Rickards traversing all outstanding rejections and objections. The Affidavit further attests to knowledge generally known in the art. In accordance with the above remarks and the attached Affidavit, claims 1-13, 16-18, 20, 23, 24, and 33 are patentable under § 103 over Ciraud in view of Halim.

Response to § 103 Rejection: Halim in view of Jeppson and Sandström

Claims 1-13 and 16-18 are patentable under § 103 over the combination of Halim in view of Jeppson or Sandström because this combination of references fails to disclose or suggest, *inter alia*, a method of compacting a mat of hot mix asphalt by applying a maximum average load stress to the mat of less than about 50 kPa. Applicant respectfully asserts that the Examining Attorney incorrectly states that the teachings of Halim support an obviousness rejection of the instant invention. Halim does not teach a method of compaction that utilizes applying a maximum average load stress to the mat of less than about 50 kPa. Rather, the teaching of Halim is directed toward applying a pressure substantially simultaneously and does not specifically teach what is considered to be the "overload pressure" of the materials in question. That is, there is no indication that such pressures anticipate a pressure of 50 kPa. Furthermore, Applicant notes that 50 kPa is very low as compared with pressures conventionally used in the compaction of asphalt.

Halim discloses an improvement for compacting asphalt in which hot asphalt is spread onto a compacted roadbed material and then compacted by applying pressure substantially simultaneously by a first and second means. The Examiner notes that Halim states that it is desirable to apply a pressure to the asphalt which closely approaches but which does not exceed the overload pressure of material. Halim does not teach or suggest the overload pressure of the material. The Examiner inappropriately extends this teaching to a conclusion that it would have been obvious, in view of this teaching, to apply an average load stress of less than about 50 kPa (10 kPa to about 40 kPa) to avoid exceeding the overload pressure of the asphalt. Contrary

to the Examiner's view, Applicant submits that this reference merely makes a general statement in the description of the prior art with respect to asphalt compaction, and in no way anticipates or would lead a skilled artisan to apply an average load stress of less than about 50 kPa as claimed.

With respect to the Jeppson and Sandström references, Applicant submits, that Sandström and Jeppson fail to teach or suggest the definition of engagement of any one portion of the mat with the asphalt for a period of at least 1.5 seconds. Rather, both Sandström and Jeppson relate to conventional drum compactors that provide a point of contact between or at each drum contact surface with the asphalt. As such, the contact time with the asphalt in the case of Sandström and Jeppson is relatively short. There is no recognition of travel speed or teaching of the importance of contact time between the asphalt mat and the compaction surface in Halim and particularly there is no teaching or motivation for engaging any one portion of the mat with the asphalt for a period of at least 1.5 seconds. As such, there is no anticipation of the present invention.

Referring to the instant invention, as discussed in the final paragraph of page 4 and through the Specification thereafter, the present invention recognizes that a visco-elastic fluid, such as the binder in hot mix asphalt, has a response to a load that is not only temperature dependent, but also time dependent. That is, the teaching of the present Application includes that the application of a load of short duration will result in a more elastic asphalt response than a viscous type response as the binder does not have time to flow. This concept is not taught or suggested by the patent references of Halim in view of Jeppson and Sandström as suggested by the Examiner. As claimed by the present invention, the action of the compactor on the surface over a period of at least 1.5 seconds at a maximum average load stress of less than about 50 kPa provides for the viscous flow of the binder as differentiated from the elastic flow generally seen using conventional methods, including methods which would have been anticipated using the compactor of Halim.

An analysis under § 103 requires that the Examiner explain why, after assessing the level of those skilled in the art, the skilled artisan would have found the claimed subject matter, as a whole, to have been obvious. To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the references, and there must

be a reasonable expectation of success. MPEP § 706.02(j). The suggestion or motivation to make the claimed combination and a reasonable expectation of success must both be found in the prior art. *Id.* The Examiner cannot rely on hindsight as the basis for combining two references. If the references do not expressly or impliedly suggest the combination, “the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” *Id.* (citing *Ex parte Clapp*, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. & Inter. 1985)).

There is no motivation in the references themselves to combine these references. The Examiner has indicated that Halim does not discuss the speed or positioning of the compactor to the paver. Furthermore, Halim does not teach application of an average load stress of less than about 50 kPa. The references, thus, do not teach or suggest a combination of the method of compacting a mat of hot mix asphalt by running at least one belt engaged with any one portion of the mat for a period of at least 1.5 seconds, while applying a maximum average load stress to the mat of less than about 50 kPa. The references, consequently, do not suggest the specific compaction parameters of the instant invention.

There is also no motivation in the knowledge generally available to one of ordinary skill in the art of asphalt compaction to combine these references to result in the instant invention. The Examiner does not state how an individual of ordinary skill in the art would understand the statement in Halim that it is desirable to apply a pressure to asphalt which closely approaches, but which does not exceed, the overload pressure of the material, to mean specifically that one should apply an average load stress of less than about 50 kPa. Further, the Examiner does not explain how such a person would recognize that a visco-elastic fluid, such as the binder in a hot mix asphalt, has a response to a load which is not only temperature dependent, but also time dependent, and more specifically that the present invention teaches that the compaction surface of the compactor is engaged with any one portion of the mat for a period of at least 1.5 seconds. In addition, the form and function of traditional compaction equipment are not consistent with those of the instant invention. There is no basis for assuming that qualities beneficial to traditional asphalt compacting equipment are also likely to be beneficial to the instant invention.

The Examiner accordingly has not succeeded in bringing a *prima facie* case of obviousness in this instance. Claims 1-13 and 16-18 therefore are patentable under 35 U.S.C. § 103(a) over Halim in view of Jeppson or Sandström.

Response to § 103 Rejection: Moorhead in view of Stowell

Claims 1-13 and 16-18 are patentable under § 103 over the combination of Moorhead in view of Stowell because this combination of references fails to disclose or suggest, *inter alia*, a method of compacting a mat of hot mix asphalt by applying a maximum average load stress to the mat of less than about 50 kPa. The Examiner admits, “regarding the limitations of duration and load, these references are silent.” The Examiner further concludes that the duration and load is inherently left to one skilled in the art in order to ideally suit a particular application. As previously discussed with respect to the § 103 rejection of Ciraud in view of Halim, these claimed limitations are not inherent and the Examiner has failed to establish his *prima facie* case of obviousness.

The Examiner accordingly has not succeeded in bringing a *prima facie* case of obviousness in this instance. Claims 1-13 and 16-18 therefore are patentable under 35 U.S.C. § 103(a) over Moorhead in view of Stowell

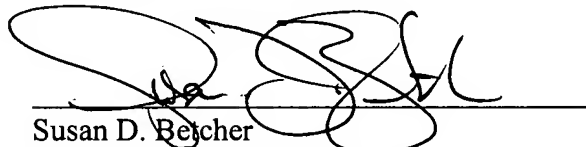
Further, in accordance with the comments above and the Rule 132 Affidavit attached herewith, Applicant believes he has addressed all outstanding rejections and objections and has placed the application in condition for allowance. A copy of the pending claims is attached for the Examiner’s convenience.

Applicant respectfully submits that all claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited. Applicant's attorney wishes to express her willingness to engage in a telephone interview to further the status of this application if any further concerns need to be addressed.

Respectfully submitted,

Ian James Rickards

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SDB:kkh

Enclosure:

Postcard
Copy of Pending Claims
Substitute Specification
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